



Rise of Space Resources

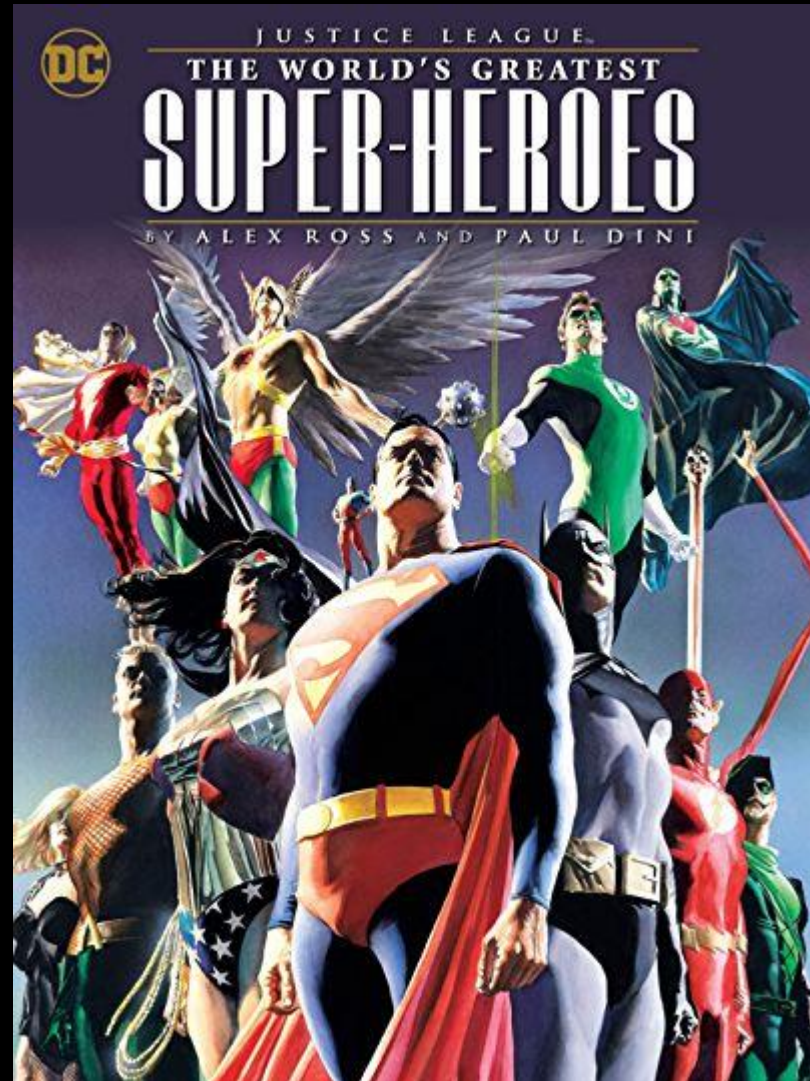
NASA Advisory Council

Regulatory and Policy Committee

October 31, 2019

Regulatory and Policy Committee Roster

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John Logsdon, Historian, GW University
Mark Sundahl, CSU Law School
Josef Koller, Aerospace Corporation



Two Paranormal Meetings Since the Last NAC



- **September 5th-** Briefing from the Department of State; Discussion, review, and revision of draft Principles on Space Resources.

October 16th- Review, revision, and adoption of the Principles on Space Resources; a briefing on Procurement Processes from NASA OGC and Procurement officials, and a discussion of spectrum management

Principles on Space Resources

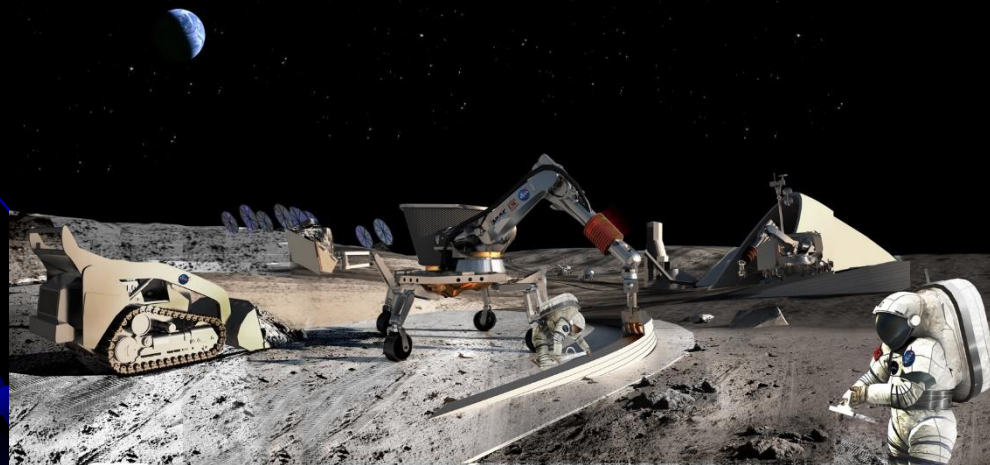
Major Reasons for the Recommendation: The ability to extract and utilize space resources is critical to the success of Artemis specifically and the future of both public and private space exploration and commerce generally. NASA, in collaboration with the Departments of State, Commerce, Transportation, and the National Space Council, needs to ensure that the U.S. has a clear policy enabling extraterrestrial resource extraction and utilization that can serve as a model for other countries as well as international bodies such as the United Nations Committee on the Peaceful Uses of Outer Space (“UN COPUOS”).

Consequences of No Action on the Recommendation: If NASA does not lead by example, foreign countries, the UN COPUOS, and/or other international bodies, may adopt conflicting or different policies that could create barriers to or even deter investment in the extraction and utilization of extraterrestrial resources. Moreover, the lack of a clear and consistent global policy could result in unnecessary confusion and potentially conflict over space resources.

Background

Several countries plan to establish a permanent human presence on the Moon within the next five to fifteen years. After using the Moon as a testing grounds, humankind will establish a presence on Mars, and eventually on other planets, their moons, and asteroids (referred to collectively as “Celestial Bodies”).

Humans cannot survive permanently on the Moon or elsewhere in deep space unless resources from the surface and sub-surface of Celestial Bodies (“Space Resources”) are extracted and utilized.



Background (cont.)

The scarcity of certain Space Resources, such as water-ice, may lead to conflict unless measures are taken to avoid disputes.

In order to avoid conflict and to fulfill U.S. obligations under international law (such as the duty to operate with due regard to the interests of other states and to avoid harmful interference), it is necessary for NASA and the U.S. Government to adopt principles to govern the extraction and utilization of Space Resources.



Recommendation

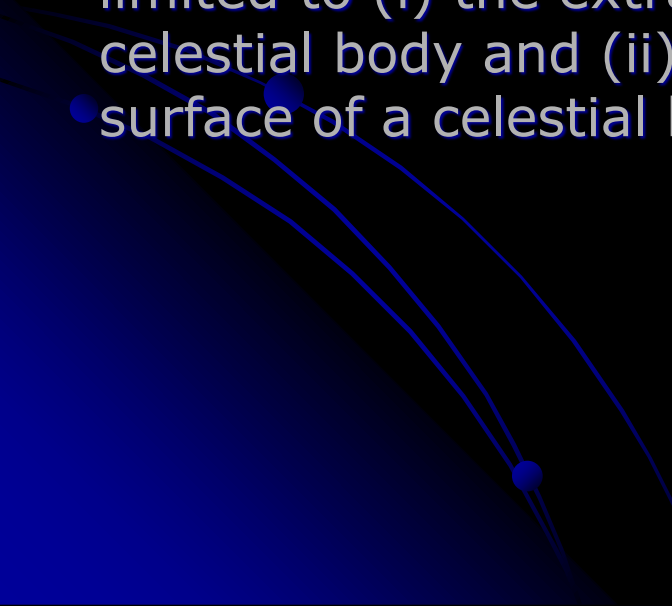
The Committee recommends that NASA, in coordination with the Department of State, the Department of Commerce, and the National Space Council, adopt principles regarding the extraction and utilization of Space Resources as set forth in Annex A hereto.



Principles on Space Resources

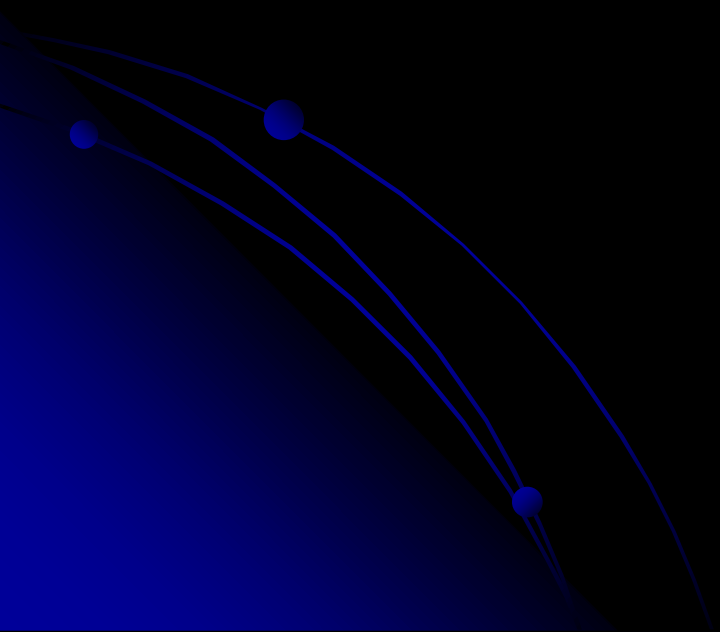
Principle 1

Abiotic space resources (or simply “space resources”) shall be extracted in a manner that fully complies with the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies. In this context, the term “extraction” includes but is not limited to (i) the extraction of resources from the interior of a celestial body and (ii) the recovery of resources from the surface of a celestial body.



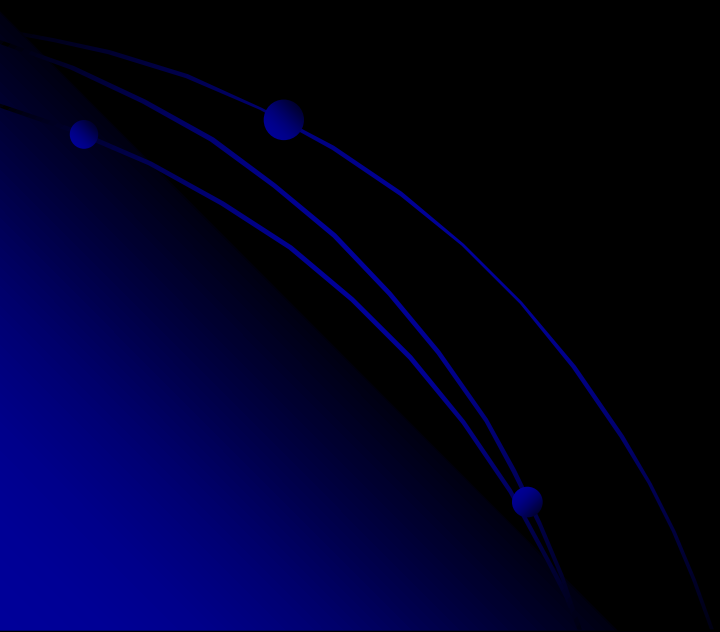
Principle 2

The extraction of space resources should be conducted in a manner that takes into account the United States' commitment to the United Nations Guidelines for the Long-term Sustainability of Outer Space Activities.



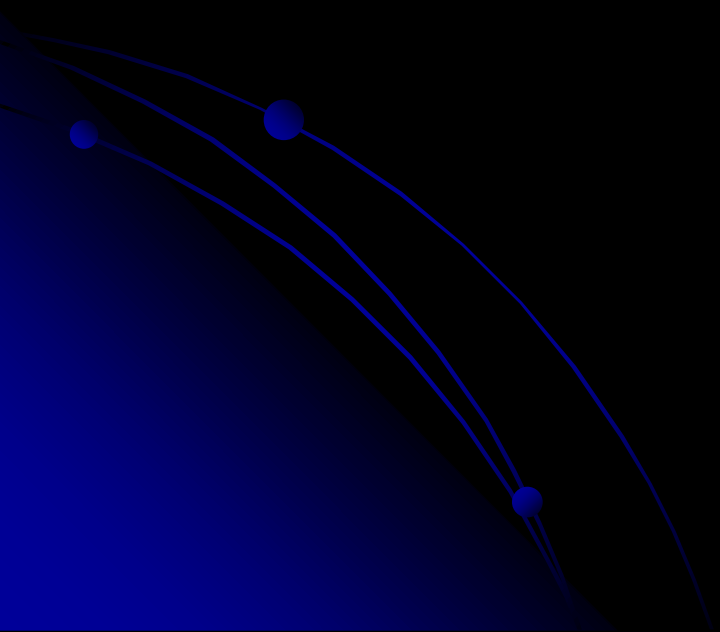
Principle 3

The extraction and utilization of space resources does not constitute national appropriation under Article II of the Outer Space Treaty.



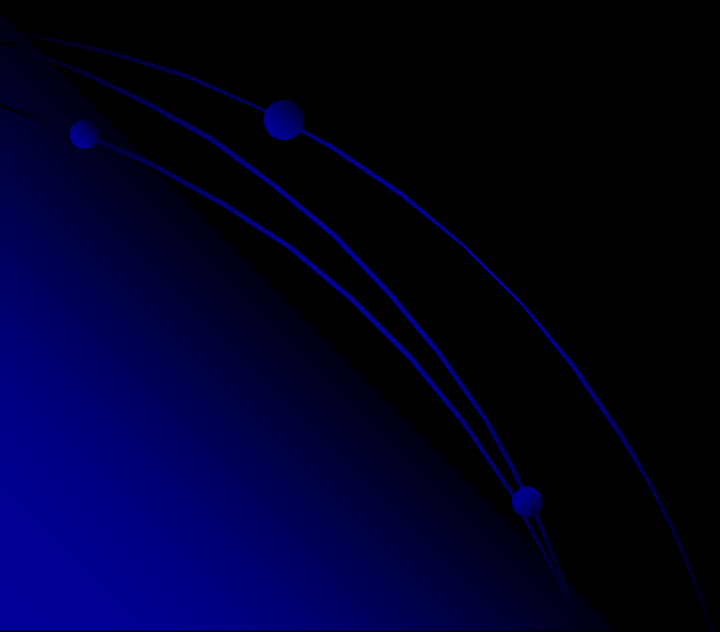
Principle 4

Per Article VI of the Outer Space Treaty, States shall authorize and supervise the extraction of space resources from celestial bodies.



Principle 5

States' domestic laws should facilitate government and non-government extraction and utilization of space resources as well as the ownership of those resources.

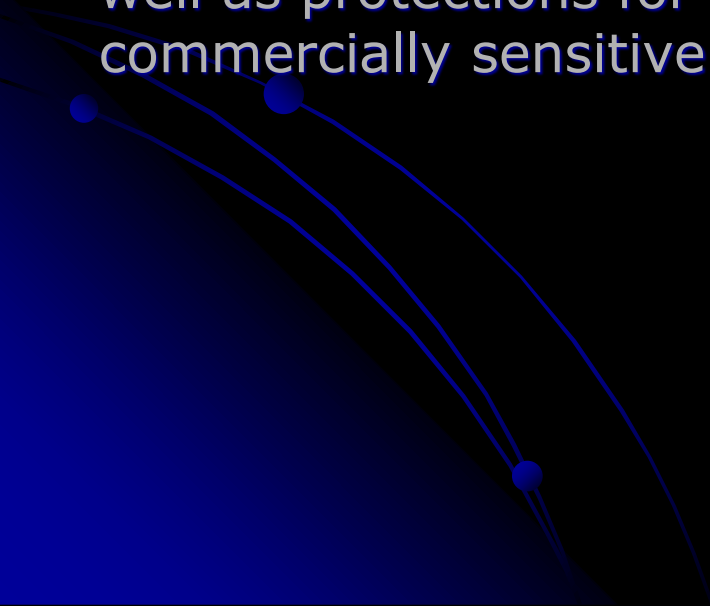


Principle 6

The principle of due regard, consistent with Article IX of the Outer Space Treaty, should be taken into account by any State authorizing the extraction of space resources. If the State responsible for authorizing the extraction of space resources has reason to believe, based on the information described by Article XI, such activities would result in harmful interference, consistent with Article IX, the State shall engage in consultations with the affected States. |

Principle 7

States shall share scientific information with the international community resulting from activities related to space resource extraction and utilization, to the greatest extent feasible and practicable, on a good-faith basis, and in compliance with national laws, including but not limited to export controls as well as protections for intellectual property and national and commercially sensitive data.



Principle 8

States shall inform the Secretary-General of the United Nations as well as the public and the international scientific community, to the greatest extent feasible and practicable, in compliance with national laws, including but not limited to export controls as well as protections for intellectual property and national and commercially sensitive data, regarding the nature, conduct, and location(s) of authorized space resource extraction activities.

States shall also provide timely notice to the Secretary-General of terminated space resource extraction activities.